



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/932,427	09/17/1997	YOSHIO KITAMURA	1081.1055/JD	5306

7590 03/08/2002

STAAS & HALSEY  
700 ELEVENTH STREET NW  
SUITE 500  
WASHINGTON, DC 20001

[REDACTED] EXAMINER

PORTKA, GARY J

ART UNIT	PAPER NUMBER
2187	

DATE MAILED: 03/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. <b>08/932,427</b>	Applicant(s) <b>Kitamura</b>
	Examiner <b>Gary J. Portka</b>	Art Unit <b>2187</b>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1)  Responsive to communication(s) filed on Dec 28, 2001
- 2a)  This action is FINAL.      2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

#### Disposition of Claims

- 4)  Claim(s) 1, 3-5, 7, 9-11, and 13-16 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1, 3-5, 7, 9-11, and 13-16 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved.
- 12)  The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

- 13)  Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a)  All b)  Some\* c)  None of:

1.  Certified copies of the priority documents have been received.
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

- 15)  Notice of References Cited (PTO-892)      18)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16)  Notice of Draftsperson's Patent Drawing Review (PTO-948)      19)  Notice of Informal Patent Application (PTO-152)
- 17)  Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 20)  Other: \_\_\_\_\_

Art Unit: 2187

## **DETAILED ACTION**

1. Claims 1, 4, 7, and 13-16 have been amended by Applicant. Claims 1, 3-5, 7, 9-11, and 13-16 are pending.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

3. Claims 1, 3-5, 7, 9-11, and 13-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Tanaka et al., U.S. Patent 5,542,064 (hereinafter “Tanaka”).

4. As to claims 1, 7, and 13-16 Tanaka discloses a *RAID apparatus and control method comprising*:

a. *Plurality of disk units (Drives 16-x) storing a plurality of copies of each of data of logical volumes (“identical data”), and disk controller (2) for accessing the disk units at the logical volumes (see Abstract, Figures 1-3, column 2 lines 14-17 and 54-67);*

b. *The disk controller including a memory storing number of request operations to each disk, and control means comparing these and selecting the single disk having the least, and thus outputs a request to the single minimum waiting disk unit based upon the comparison (see Figure*

Art Unit: 2187

5, column 6 line 62 to column 7 line 17, and column 8 lines 1-47), *where the number is incremented/decremented for each new request/completion* (see column 10 lines 19-24 and 44-49);

c. *Wherein the disk units perform operations in a queued order* (see column 4 lines 42-49, column 7 lines 33-53, and column 8 lines 1-5);

d. *Wherein the memory stores the recited table indicating correspondence between disks and logical volumes* (see Figure 3, and column 4 line 60 to column 5 line 27; each address designates a logical volume since for example as shown in Figure 3 logical address 2 designates a physical address at A1 that contains a plurality D1 of bytes on disk drive 1 (equals logical volume copy on one disk), or alternatively designates the physical addresses A1, A2, and A3 on three disks (equals the logical volume that spans the disks)) and *selection of the disk on which a logical volume is allocated by designation of the logical volume by a high-rank apparatus* (CPU, see Abstract, selection indicated in Figure 3).

5. As to claims 3 and 9, Tanaka discloses *channel adapter* (4-x and 5) as claimed (see Figure 1, and column 3 lines 58 to column 4 line 1), *device adapter* (14 and 17-x) *for accessing the disk units* (see Figure 1 and column 4 lines 19-21), and *resource manager circuit* as claimed (including MP 11-x, see column 4 lines 13-24).

6. As to claims 4 and 10, Tanaka discloses the *resource manager incrementing and decrementing number of operations of a disk unit* (see column 10 lines 19-24 and 44-49).

7. As to claims 5 and 11, Tanaka discloses *the memory stores status information for the disk units, for use in selecting a normal unit* (see column 7 lines 4-9).

Art Unit: 2187

***Response to Arguments***

8. Applicant's arguments filed December 28, 2001 have been fully considered but they are not persuasive. Applicant argues that the selecting and accessing steps of Tanaka are different than the claimed invention because Tanaka selects a number of drives having the lowest number of commands queued, and accesses the first connected drive; the present invention selects the single drive having the minimum number of operations and accesses it. It is not agreed that the claim language is patentably distinct in this regard. Since Tanaka selects a plurality of drives that have the lowest number of operations, Tanaka selects the drive having the lowest number; if this drive is connected first it is accessed, thus reading on the claim language (that is, it is selected based in part upon the comparison and in part upon the speed of connection). The recitation of outputting a request to the single minimum waiting disk unit does not rule out the sending of requests to other units also. Alternatively, if there is only one drive having zero pending operations, that is the one drive that will be selected (as is clear from the description at column 8), thus reading on the present claims.

***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the

Art Unit: 2187

date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication from the examiner should be directed to Gary J. Portka at telephone number (703) 305-4033. The examiner can normally be reached on weekdays from 9:00 A.M. to 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Do Yoo, can be reached at (703) 308-4908.

Any response to this final action should be mailed to (or faxed as provided below):

Box AF  
Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Fourth Floor (Receptionist).

The fax phone number for the organization where this application or proceeding is assigned are as follows:

- |                |  |
|----------------|--|
| (703) 746-7238 | (After Final communications)             |
| (703) 746-7239 | (Official communications)                |
| (703) 746-7240 | (Status inquiries, draft communications) |

Any inquiry of a general nature relating to this application or proceeding should be directed to the Group receptionist, whose telephone number is (703) 305-3900.

GJP

Gary J. Portka  
Patent Examiner  
March 4, 2002

*Do Hyun Yoo*  
DO HYUN YOO  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100